FIRST AND FOREMOST

Specialist Software thats too good to miss !

At BetterBytes we LOVE computers & computing. That's why we've made it our business to write top quality programs that are easy to use, have great graphics, & give powerful performance for Plus D & Disciple. Because our programs are specially written to get the most from your discs & drives, we lead the way with innovative software that's hard to beat.

We were the FIRST to bring a real disc drive environment to the Spectrum. We were the FIRST (& only) to offer an inovative & genuinely useful DISC MANAGER System for Plus D & Disciple.

We were FIRST to offer a commercial quality Filing System, which will handle an unlimited amount of virtually ANY type of info, by storing data on disc, rather than in memory. FILEMASTER is used by Schools, Doctors, Businesses etc. & many Home Users & Collectors with Plus D or Disciple. FileMaster has lots of features which users find more and more useful as data mounts up over a period of time ..... Thats because when writing programs, we think ahead, about eventualities. What if a file grows too large for memory? What if the user forgets how the search flags, for example, are set up? What if ....?

Here at BetterBytes we think "WHAT IF" a lot. This we believe, is one of the main keys to better programs, and its the users of our software who reap the benefits from all of our efforts.

Our target is programing excellence. We aim for our programs to become outstanding additions to your software collection. Experience has shown that BetterBytes programs hit the mark, and are NOT cast aside, hardly ever to be used again.

We believe our software is an investment which is repaid, time and time again over the years.... Thats because our programs have inovation, thought and many 'WHAT IFS' built right into them.

Software of this special quality can't be written overnight, betterbytes programs can take a long time to write... because we put so much into them.

We were FIRST to offer a real Word Processor re-written specially for Plus D & Disciple, and are still the only software house within the whole Spectrum range, to offer a large built in THESAURUS. Thats TWO FIRSTS for our popular program FASTWORD PLUS.

BetterBytes dont just write progs for customers to use ... we write them for customers to use and ENJOY. Our software is easy to operate, is very friendly with excellent graphics and has enjoyment built right in ! Get added power and pleasure from your Disc Drive/s.

We were the FIRST to bring a program to help organise the files on your discs. The budget priced DISC ORGANISER plays an essential part in any users collection, with routines that simplify and speed up File Maintenance on the Plus D/Disciple.

If you LOVE using your Spectrum with Plus D/Disciple, then one of the best investments you can make is a BetterBytes software purchase.

DISC MANAGER

Get a complete profile of your disc collection - ON ONE DISC. Pinpoint location of any prog FAST. Suite of 5 progs Total control. Only £12.95

DISC ORGANISER

Organise the content of your discs. Ideal Housekeeping Tool.Disc-Doctor with Sector Check/Repair, Recover, Fast load & much more. Value £5.

FILE MASTER

Unlimited data storage.Fast Search & Sort. Tailor to suit your needs... EASY TO USE. Pull-down Menus & Windows. Print opt. Only £19.95

FASTWORD PLUS

A unique package. Wordprocessor + built-in Thesaurus ! Find related words. Check spelling/meaning etc. Needs Tasword2 code. Only £9.95

DISC MATE

Disc copier and Toolkit. Minimises disc swapping. Multiple Load/Save. Copy in ANY order Disc/Sector/File checks. Intelligent file recovery. Bad sector lockout etc Only£ 10.95

UTILITY DISC

More than 9 useful progs on 1 disc. Inc AUTOBOOT, a blisteringly fast Cat-Loader, worth the price of this disc alone. A real Treasure Trove of worth-while utility programs. £10.95

WHEN ORDERING Please give FULL details of Interface & Drives.

COMING SOON! THE SAM MASTERDOS DISC ORGANISER

FREE

If you've read this AD, you must be surprised to learn, that, after months of work, we're still developing ideas for our latest creation ! Thats because we want our first SAM title to be EXTRA special. We're building greater power, ease of use and that special BetterBytes quality, right into the program. As you know it takes time to write something thats really good.

Heres one program that is definitely worth waiting for !

2 PLUG TAGS + FREE WITH EVERY PROGRAM!

Plug identification tags help avoid appliance leads getting mixed up & give greater electrical safety.

Stocks of computer related titles are limited but others are available. State preferred appliance titles (2 per prog ordered). Put tick if title is not available.

* Suitable for UK use only.

YOU ALWAYS GET BETTER VALUE FROM BETTERBYTES

BETTERBYTES

10 SPITTAL TERRACE · GOSFORTH
NEWCASTLE UPON TYNE NE3 1UT · TEL: (091) 285 6185

Vol.5 - Nº 5. January 1992.

FORMAT

FOR SPECTRUM AND SAM USERS

DISCS
HOW MUCH SHOULD YOU PAY?

£1.25 [UK R.R.P.] ISSN 0963-8598.

KOBRAHSOFT
SPECTRUM AND SAM COUPE UTILITIES

SAM DICE DISC UTILITY: NEW!
Features READ, BACKUP, RECOVER erased files/lost data, REPAIR directories, DISC CHECK, LOCK OUT bad sectors, SEARCH for string, RENAME files, FORMAT all or just one track. £12.95 on Disc.

CD2 TAPE TO SAM DISC UTILITY: NEW!
Transfer THE VAST MAJORITY of your Spectrum tapes to SAM disc. Gives superb Spectrum tape compatibility. VERY EASY to use. £10.95 on Disc.

SP7 TAPE TO +3 DISC UTILITY: NEW!
Transfer tapes to +3 disc. Now comes with a BEGINNER'S Manual, an ADVANCED User Manual and an Encrypter Demo Tape. Also has a superb DISC CATALOGUER. Will now transfer FULL 128K programs. Includes SP' Companion - Shows how to transfer many games. Supplied on DISC at:- £14.95.

SP7 COMPANION VOL 2:
TRANSFERS 100+ GAMES. Needs SP7:- £4.95

SC7 UTILITY: NEW!
Latest TAPE to TAPE backup utility. Will backup virtually ANY program. Price:- £9.95 on Tape.

DMS +3 DISC MANAGEMENT SYSTEM:
NEW Version 1.1 now with printout, high capacity formats AND extended directories. Organise all your disc files. LARGE database; FAST search. EASY to use. £14.95 on disc.

D.I.C.E. PLUS THREE DISC UTILITY:
NEW Version 3.0 Now with high capacity format, data printout and disassembler, LOCK-OUT faulty sectors; RECOVER erased files and much more. Very easy to use. "An excellent package", CRASH Oct'88. £14.95 on disc.

SPECTRUM MACHINE CODE COURSE:
FULL course from beginner to advanced level. Applies to ALL Spectrums. Suitable for ALL. Free Disassembler and Editor/Assembler:- £20.00.

DB2 PLUS 3 DISC BACKUP UTILITY: NEW!
Backup +3 PROTECTED discs to DISC or TAPE; Easy to use; Handles Multi-Loads and now even MORE discs:- £14.95 on Disc.

PLUS 3 DIARY & FILING SYSTEM:
NEW version 1.1 with full printout. Superb filing system/diary for the +3 with LARGE database, fast search/retrieve and Biorhythms:- £12.95 on Disc

STILL AVAILABLE:- SD5 Tape to M/D Utility; SO5 Tape to Opus; MT1 M/D Toolkit; SC6 Tape Utility; SW1 Tape to Wafadrive; CT2 SAM Tape Utility; SM1 Multiface Suite - please ring for FULL Details.

MONEY BACK GUARANTEE - BUY WITH CONFIDENCE.
UPDATES: SEND ½ NEW PRICE + OLD DISC FOR LATEST VERSION.

Send Cheque/P.O. to:- **"KOBRAHSOFT" Dept F,**
Pleasant View, Hulme Lane, Hulme, Longton, Stoke-on-Trent, ST3 5BH.
Overseas:- Europe add £1 p&p per item, Others please add £2)
Send SAE (9"x5") for detailed catalogue - please mark envelope 'ENQUIRY".

For more information please phone 078 130 5244

Access, Visa Welcome - Please phone above number.
(24 Hour, 7 Day Service for FAST Mail Order)

CONTENTS

Vol.5 № 5. January 1991.

News On 4.....4
The Editor Speaks.....5
Writing For Format.....5
Short Spot.....7
A Personal View.....13
Photo Corner.....15
INDUG's Membership Drive.....17
Discs - To Buy Or Not To Buy..19
Thought Spot.....21
Your Letters.....23
FORMAT Readers Service.....27

THIS MONTHS ADVERTISERS:-		
	BETTERBYTES	Back Cover
	B.G.SERVICES	20
	CHEZRON SOFTWARE	20
	FRED	18
	JAMES BROWN	11
	KOBRAHSOFT	2
	LERM	16
	PBT ELECTRONICS	12
	S.D.SOFTWARE	6
	SIGMASOFT	18
	STEVE'S SOFTWARE	26
	TEACHERS PET	11

FORMAT ISSN 0963-8598.
(C)Copyright 1992 FORMAT PUBLICATIONS. All Rights Reserved.

No part of this publication may be reproduced, in any form, without the written consent of the publisher. FORMAT readers may copy program material only for their own personal use. While every effort is made to ensure accuracy in FORMAT the publisher will not be held liable for any errors or omissions.

FORMAT is published by FORMAT PUBLICATIONS.
34, Bourton Road, Gloucester, GL4 0LE, England.
Telephone 0452-412572. Fax 0452-380890.

Printed by D.S.LITHO. Gloucester. Telephone 0452-23198.

NEWS ON 4

SPECTRUM SUPPLIES DRYING UP?

Spectrums were rather rare on the shop shelves this Christmas. Dixons, Comet and Tandy had all ceased selling them. While some smaller retailers still had supplies there were reports that distributors were unable to obtain stocks from Amstrad.

Despite denials that they are dropping the Spectrum+2a in the UK Amstrad invested little in advertising prior to Christmas. Rumors exist that production in the far east is destined for other countries (eastern and southern Europe mostly). Many expect an announcement soon that the Spectrum is dead - ironic as it approaches its 10th birthday.

Having burnt their fingers with the consol market Amstrad look set to concentrate on the PC market.

BLUE ALPHA LINK UP

P.B.T. Electronics have reached agreement with Blue Alpha Electronics to take over the manufacture and sale of their range of SAM Coupe add-ons.

Swansea based Blue Alpha Electronics has become well known in SAM circles for their Voice Synthesizer, Sound Sampler and Joy Mouse. Adrian Parker, Blue Alpha's managing director, believes the move will lead to an increase in market penetration for his products.

P.B.T. will now handle both retail and dealer sales and will also take over responsibility for all warranty repairs for existing owners.

BT UNDER FIRE

British Telecom have come under fire over delays in refunding subscriptions for their now defunct MICRONET system.

Two months after the service closed down there are still many people waiting for refunds of up to £46 on their subscriptions.

Think how quick BT would be to take action if you owed them money.

PRO-DOS FOR SAM

B.G.Services are about to launch a new disc operating system for the SAM Coupe. Called PRO-DOS it will be able to run a large amount of CP/M compatible software.

CP/M is a disc operating system which first started way back in the early days of micro-computers. In some ways it could be said that MS-DOS evolved out of CP/M. While much surpassed by later operating systems, CP/M still has a large following because it is available on so many computers.

PRO-DOS is compatible with CP/M 2.2 and BGS will be helping to set up a library of programs (mostly PD) which will have been converted to SAM's 3.5" disc format (no common in CP/M circles).

For more details send a stamped addressed envelope to B.G.Services, 64 Roebuck Road, Chessington, Surrey, KT9 1JX.

CRASH BOUNCES BACK

The Spectrum games magazine CRASH, which closed when parent company Newsfield called in the liquidators two months ago, is back on the newsagents shelves.

Now priced at a whopping £2.20 the 68 page Christmas issue hit the stands during the first few days of December. CRASH is now published by a company new called Europress Impact.

Europress seem to have taken over the old CRASH offices and many of the staff. Let us hope they are able to rebuild CRASH to the glory it had in the mid 80s.

News Credits: P.Fowler, Mike Davis.

URGENT we need your news. Anything you think other people should know about. Items printed earn contributor 3 month extra subscription (please claim when renewing).

Hello there, nice to be back, I hope you all had a very nice Christmas. Thanks for all the cards you sent us, it made the office very colourful.

Welcome to the first issue of 1992. I can promise you a very packed year as far as FORMAT is concerned - lots of articles for both Spectrum and SAM users. Keep reading, if your renewal is due get your cheque off quick - you can't afford to miss a single issue.

This month sees the the first in a new, irregular, series that will allow you - the reader - to have your say. The letters page has always been a popular feature in FORMAT, but letters have to be kept as short as possible so I can print as many as I can. So, to give people more room and to allow them to speak out without fear of their words being hacked too much, I'm pleased to introduce A PERSONAL VIEW. The first comes from a long standing FORMAT contributor Ken Elston. I asked him to start the ball rolling, it is now up to you.

This year marks the 10th Birthday of Britain's biggest selling home computer - the SINCLAIR ZX SPECTRUM. It is an important landmark, so what can we do to celebrate it? I welcome any ideas readers may come up with.

As usual, the January issue has to be compiled before Christmas (as I write this the December issue is still at the printers) or you would not get it until the end of the month. This means it is smaller than average and there are a couple of regular items missing. The post office let Nev down and the Help Page disc could be on its way to New Zealand for all I know. Also, due to lack of space I've had to leave out the latest instalment of Carol's machine code course. Back to normal service next month, see you all then.

Bob Brenchley. Editor.

WRITING FOR FORMAT

FORMAT needs your contributions. Articles on any computer related subject are urgently needed to fill these pages. Many readers are asking for more information things like:-

Computer Music, Using RS232,

Business Programs, +3 Disc System

Education, Printers, Games

Article length could be from half a page up, but two or three pages is about right for most subjects. You could target beginners or experts, there is room for all in FORMAT.

Articles should be sent as ASCII word processor files on disc (do not use printer control codes in the text). We can cope with 3½" or 5¼" discs from DISCIPLE, PLUS D, SAM or IBM PC. Don't worry too much about spelling, we will do our best to correct things and lay out the article for you.

Programs should be included on the disc so we can load and test them before printing. Avoid using imbedded colour control codes and UDG characters - they make listings harder to produce and to read, use INK, PAPER and CHR$ to do the same job. It is also better to use upper case characters for variable names and NEVER use lower case L as a variable it looks to much like the number 1.

Include a printed copy so we can read them straight away. Pack any pictures flat or include SCREEN$ files for us to print out here.

Come on, give it a go, others will also like the subject you are interested in. Send your work to the normal address or give us a ring to talk about it.

sd software

SPECMAKER UNI-DOS PC-SUITE

UNIDOS Version 2 of the incredible new DOS from Steve Warr for the PLUS D and DISCIPLE. Same DOS file for both systems. Random files. Sub directories. Hundreds of files on one disk. Hidden files. Protected files. Copy files of any length. Incredibly versatile screen dump routines. Error trapping. Many more features. Compatable with all Spectrums*. Over 20 programs now included on the disk. * +2A/+3 restricted to 48K mode.

SPECFILE+ Now a Spectrum data filing program that never gets out of date. Specfile+ holds a massive 28K of data and by using data compression makes it seem like much more. Very fast CASE selective and complex searches. Designed to be added to so it grows as you do. This program is a must have for any one with data to hold.

SPECMAKER The simplest Spectrum emulator for your SAM. 1000s of 48K programs work without the need for any conversion. Most other programs need only minor changes. All the extra SAM keys work in Spectrum mode. Uses SAM's parallel printer port and up to 380K of SAM memory as a RAMDISK. PLUS D and all OPUS diskss can be loaded into SPECMAKER and saved to SAM disk. Can now convert files between Messenger & SPECMAKER format and so save on valuable disk space. Supplied on 3.5" disk. eMaster Dos & Master basic required for single density OPUS

PC-Suite. From the author of SPECMAKER S.D. Software brings you PC-SUITE. Now you can transfer your IBM data files by reading and writing IBM disks on your Sam. PC-Suite will let you format IBM disks on Sam. Write Sam basic programs on your PC.AT. Use PC-Suite to copy Sam data files to PC disk and print them on a high quality laser printer. Many more uses.

nb. Not a PC emulator.

INDUG PRICES		NON MEMBERS
Specfile+	£ 9.95	£12.95
UNIDOS	£19.95	£25.95
Createfile Manual	£ 5.50	£ 6.50
Specmaker	£ 9.95	£12.95
Specmaker Upgrade	£ 6.50	£ 8.00
PC Suite	£19.95	£25.95
IBU* /SAMIBU	£ 3.50	£ 4.90
DBU*	£ 4.00	£ 5.50
File Convertor*	£ 4.50	£ 5.30
Hackers Workbench*	£ 8.50	£ 9.90

* GDOS programs still available *

Don't forget to say if ordering for PLUS D or DISCIPLE and the size of disk required. (PLUS D, 3.5 inch 80T will be sent otherwise)

PLEASE Add £0.50 Postage (£1.20 OUTSIDE UK)

DO NOT FORGET YOUR INDUG MEMBERSHIP NUMBER

S.D Software, 70 Rainhall Road, Barnoldswick, Lancashire, England, BB0 6AB.

SHORT • SPOT

By:- John Wase.

Happy New Year, folks. I'm overfull of Christmas Pudding, lethargic and my spouse is urging me to take exercise (actually, I'm not yet, since it's November, but I've got an imagination). What's the cure? Retire to beat on your computer; that's what. Kids fed up? Get them to help to type in some of these bits; keep them out of my better half's hair (there, that's avoided sexism). And here are some bits to do the trick.

First in the field is this offering from Grant Dixon of Peterstow, Ross on Wye, Herefordshire. He has a technique to improve your drawing programs, particularly engineering or technical drawings. 'Twill work on Spectrum or SAM: type it this short demo and look carefully at what he's done...

```
 10 REM Engineering Drawing
 20 CLS
 30 PLOT 10,130: DRAW 10,10: DRAW 160
    ,-20: DRAW 0,-60: DRAW -10,-10: D
    RAW -160,20: DRAW 0,60
 40 DRAW 160,-20: DRAW 0,-40: DRAW -1
    40,16
 50 PLOT 170,110: DRAW -10,-10: DRAW
    -140,16
 60 DRAW 0,-38: DRAW 160,-18
 70 PLOT 30,115: DRAW 0,-30: DRAW -10
    ,-8
 80 PLOT 160,100: DRAW 0,-28
100 PRINT "Look carefully at this dra
    wing"
200 PAUSE 0
250 STOP
```

Once you have the technique, you can introduce it into your own programs... It's so simple, really...

Robert Brady of Evington, Leicester, again. Remember that one line program for SAM, where you had to steer the line across the screen, avoiding the mines, and get it through the gap? This is just the same, only there are two lines, with keys 0 and 5 respectively providing the thrust. Tremendous game, Robert. Keeps 'em both occupied!

```
 10 MODE 4: CSIZE 8,8: CLS #
 20 LET LE=1,LI1=1,LI2=1
 30 LET Y1=40,Y2=120
 40 FOR N=1 TO LE=3: PRINT AT RND(16
    )+3,RND(29)+1;CHR$ 143: NEXT N
 50 PLOT 0,0: DRAW 0,160: DRAW 255,0
    : DRAW 0,-30: PLOT 255,80: DRAW
    0,30: DRAW 0,-60: PLOT 255,30: D
    RAW 0,-30: DRAW -255,0: PLOT 255
    -60,80: PEN 4: DRAW 60,30: PLOT
    255-60,80: DRAW 60,-30: PEN 7: R
    EM PLOT 0,80: DRAW 255,0
 60 FOR X=1 TO 255 STEP 2
 70 IF LI1 AND (BIN$ IN 61438)(8)="0
    " THEN LET Y1=Y1+2
 80 IF LI2 AND (BIN$ IN 63486)(4)="0
    " THEN LET Y2=Y2+2
 90 IF LI1 THEN LET Y1=Y1-1
100 IF LI2 THEN LET Y2=Y2-1
110 IF LI1 THEN IF POINT(X,Y1)=7 THE
    N LET LI1=0
120 IF LI2 THEN IF POINT(X,Y2)=7 THE
    N LET LI2=0
130 IF LI1 THEN PLOT PEN 13;X,Y1
140 IF LI2 THEN PLOT PEN 14;X,Y2
150 IF LI1 THEN PRINT AT 0,0;"PLAYER
     1 ";LE
160 IF LI2 THEN PRINT AT 0,16;"PLAYE
    R 2 ";LE
165 IF LI1+LI2=1 THEN LET LI1=0,LI2=
    0: GOTO 180
170 NEXT X
180 IF NOT LI1+LI2 THEN RUN
190 LET LE=LE+1: CLS : GOTO 30
```

One small grouse. Robert had submitted this on disc, thank heavens, but there was a lower case "ell" in many lines, which I've altered in case anyone gets confused with the listing. Please don't use lower case "ell"; it gets mixed up with number one. Use upper case for variables if you can please. Its a cracking little program, though.

Now back to the Spectrum. Alf Casarrubios of Walthamstow collects fancy character sets from a variety of programs. As long as you can break in somehow, it's easy. Just do:-

```
PRINT "Char Set at Address "; PEEK 236
07*256+256+PEEK 23606
```

Wow! What it does, in fact, is to seek out character sets by PEEKing the CHARS system variable, which points to the start address of the character set in RAM which is being used. It then prints out the value of this start address. Scribble this down somewhere, just in case. Now all you do is:- SAVE D*"fontname" CODE address,768 and Hey Presto! you've captured another character set for your collection.

Alf also includes a tip as follows: when he uses any alternative character sets in programs, he normally loads them high up in memory at address 64000, and does POKE 23606,0 and POKE 23607,249 to point CHARS to it. If you wish to load the character set at another address, then the following line will have to be included in any program or typed directly...

```
CLEAR new address-1: POKE 23606,new ad
dress-256*INT (new address/256): POKE
23607,INT (new address/256)
```

Alf is actually an electronics man, and will shortly be sending me instructions on using 5.25" disc drives on a Spectrum +3. And Alf is not averse to using the computer for work, either. When he wanted an odd resistor value not in the E12 range, this could be made up by connecting two standard resistors either in parallel or in series, and he used to spend many hours with a calculator and bits of paper instead of working on building the bits. So he wrote the following program, which does all the hard work and makes up any value from 0R5 to 16M4 ohms. It slows down a bit if you ask for very small tolerance values as it has to work through all the possible combinations, but generally all is done in less than a minute. Here it is...

```
10 REM PROGRAM TO CALCULATE PARALLEL
   & SERIAL RESISTANCES.
15 REM WRITTEN BY ALF CASARRUBIOS FO
   R FORMAT (C)SEPTEMBER 1991
20 DATA 1,1.2,1.5,1.8,2.2,2.7,3.3,3.
   9,4.7,5.6,6.8,8.2
30 DIM R(12): FOR A=1 TO 12: READ R(
   A): NEXT A
40 CLS : FOR Q=1 TO 32: PRINT "*";:
   NEXT Q: PRINT : PRINT
45 PRINT "          PARALLEL/SERIAL
              RESISTOR CALCULATOR"
   : PRINT
50 LET X=1: LET Y=1: INPUT "RESISTAN
   CE ?                    (MIN 0R5/
   MAX 16400000) ";R
60 IF R<.5 OR R>16400000 THEN PRINT
   "OUT OF RANGE": BEEP 1,1: PAUSE 5
   0: GOTO 40
70 INPUT "TOLERANCE IN % ? ";T
71 POKE 23658,8: INPUT "PRINTER OR S
   CREEN ? "; LINE B$
72 LET str=2: IF B$="P" THEN LET str
   =3
80 LET L=R-(T/100)*R: LET U=R+(T/100
   )*R
85 PRINT #str;R ;" OHMS AT ";T ;"% "
   ;"TOLERANCE"
86 PRINT #str
90 PRINT #str;"FROM ";L;" TO ";U;" O
   HMS"
91 PRINT #str
100 PRINT #str;"PARALLEL Resistors":
   LET A$="//": FOR s=1 TO 32: PRINT
    #str;"_";: NEXT s: PRINT #str
105 PRINT #str
110 FOR Z=1 TO 7
120 FOR M=1 TO 12: IF R(M)*X>2*U OR R
   (M)*X<R THEN GOTO 1090
130 FOR W=1 TO 7
140 FOR N=1 TO 12: IF R(N)*Y<R THEN G
   OTO 1080
150 LET P=R(M)*X*R(N)*Y/((R(M)*X)+(R(
   N)*Y))
160 GOTO 1000
170 LET X=1: LET Y=1
180 PRINT #str: PRINT #str;"SERIAL Re
   sistors": LET A$=" +": FOR s=1 TO
    32: PRINT #str;"_";: NEXT s: PRI
   NT #str
181 PRINT #str
190 FOR Z=7 TO 1 STEP -1
200 FOR M=12 TO 1 STEP -1: IF R(M)*X<
   L/2 OR R(M)*X>R THEN GOTO 1090
210 FOR W=7 TO 1 STEP -1
220 FOR N=12 TO 1 STEP -1: IF R(N)*Y>
   R THEN GOTO 1080
230 LET P=R(M)*X*R(N)*Y
```



```
1000 IF P<L OR P>U THEN GOTO 1080
1010 LET T1={(100*P/R)-100}*1000: LET
     T1=INT (T1)/1000
1020 LET R1=R(M)*X: LET K$="": LET J$=
     ""
1030 IF X>100 THEN LET R1=R1/1000: LET
      K$="K"
1040 IF X>100000 THEN LET R1=R1/1000:
     LET K$="M"
1050 LET R2=R(N)*Y: IF Y>100 THEN LET
     R2=R2/1000: LET J$="K"
1060 IF Y>100000 THEN LET R2=R2/1000:
     LET J$="M"
1070 PRINT #str;R1;K$;TAB (5);A$;R2;J$
     ;TAB (11);"=";P;TAB (24);T1;"%"
1080 NEXT N: LET Y=Y*10: NEXT W: LET Y
     =1
1090 NEXT M: LET X=X*10
1100 NEXT Z
1110 IF A$="//" THEN GOTO 170
1120 PRINT #str
1125 POKE 23658,8
1130 INPUT "ANOTHER RESISTANCE?  Y/N "
     ; LINE H$
1150 IF H$="Y" OR H$="" THEN GOTO 40
1160 STOP
 SAVE D*"RESERPAR" LINE 1
```

A little word of warning from Alf: when actually making up resistors, if say a tolerance of 5% was entered into the program, then 5% or better resistors must be used, or otherwise, the values will be out. Many thanks for the program, Alf.

Back to Alan Cox, now. He has kindly sent me a program to enable SAM to do the impossible: yes folks; it will draw an impossible object. Here it is...

```
 10 REM Drawing of an impossible obj
    ect
 15 REM by A D.Cox October 1991
 20 GOSUB 200
 30 LET xos=128,yos=88
 40 LET l=34
 50 LET p=2*l*COS (PI/6)
 60 LET q=p/3
 70 LET r=2*p
 80 LET a=2*PI/3
 90 FOR z=0 TO 2
100 PLOT -l*SIN (z*a),l*COS (z*a)
110 DRAW (p+q)*COS (a*(z+2)),(p+q)*S
    IN (a*(z+2))
120 DRAW r*COS (z*a),r*SIN (z*a)
130 DRAW (r+q)*COS (a*(l+z)),(r+q)*S
    IN (a*(l+z))
140 DRAW (r-2*q-p)*COS (PI+a*z),(r-2
    *q-p)*SIN (PI+a*z)
150 NEXT z
160 FILL USING a$,0,1.5*l
170 FILL USING b$,0,2.4*l
180 FILL USING c$,0,-1.2*l
190 STOP
200 LET xos=0,yos=0
210 FOR n=0 TO 15
220 FOR m=0 TO 15
230 PLOT m,173-n
240 NEXT m
250 NEXT n
260 GRAB a$,0,173,16,16
270 CLS
280 FOR n=0 TO 7
290 FOR m=0 TO 7
300 PLOT 2*m,173-2*n
310 NEXT m
320 NEXT n
330 GRAB b$,0,173,16,16
340 CLS
350 FOR n=0 TO 5
360 FOR m=0 TO 5
370 PLOT 3*m,173-3*n
380 NEXT m
390 NEXT n
400 GRAB c$,0,173,16,16
410 CLS
420 RETURN
```

Ever had the feeling you've seen something like this before?

Oh and by the way, remember that there was something wrong with Alan's block delete program? He's now kindly sent me another disc. Here it is...

```
  1 REM Repeat of Block delete progra
    m by "Richard Dickens, a computer
     programmer" in response to a let
    ter from Mark Mavell of Herts
  3 REM SINCLAIR ANSWERS no date reco
    rded
  4 REM To use, first save the CODE a
    s "BLOCKDEL" CODE calladdr,55
  5 REM then call up with "PRINT USR
    calladdr,first,last", where first
     and last are the start and end o
    f the block to be deleted
 10 REM ************************
 12 REM Block Delete
 13 REM Loader program
 16 REM ************************
 21 REM Repeat of Block delete progra
    m 1
```

```
 40 REM calc current value of RAMTOP
 50 LET rt=256*PEEK 23731+PEEK 23730
 59 REM make space routine
 60 CLEAR rt-54
 65 REM calc start of routine
 70 LET ps=256*PEEK 23731+PEEK 23730+
    1
 80 LET cs=0
 90 FOR n=ps TO ps+54
100 READ b
110 POKE n,b
120 LET cs=cs+b
130 NEXT n
140 READ tot
150 IF tot<>cs THEN GOTO 320
160 PRINT "The routine has been"
170 PRINT "loaded ok. The calling add
    ress is ";ps
200 DATA 205,121,28,205,162
210 DATA 45,56,3,176,32
220 DATA 8,205,162,45,1
230 DATA 2,0,24,35,96
240 DATA 105,35,205,110,25
250 DATA 229,205,162,45,56
260 DATA 3,176,32,6,193
270 DATA 1,1,0,24,14
280 DATA 96,105,205,110,25
290 DATA 84,93,225,205,229
300 DATA 25,1,0,0,201
305 STOP
310 DATA 4842: REM This is the checks
    um for the data statements
320 CLEAR ps+53
9998 STOP
```

Now here's a program from David Stokes of Launceston, who copied it many years ago from "Sinclair Programs" (RIP), where the listing was printed; sorry, he doesn't know the author. And it'll drive you potty. What it does is to ask for a list of up to ten inputs of radii, each of which it puts up on screen as a line, symmetrical about a central vertical axis; for example, 5, 25, 45, up to a maximum of 100. It has a little think, and then draws a pot in perspective. It then goes on to let you play with the pot, modify it and so on. Nice one, David. Here it is...

```
  1 REM **"potty" modified by David S
    tokes***
  2 DIM w(12): LET g=0: DIM x(130): D
    IM y(130): LET f=0
  3 INK 0: BORDER 7: PAPER 7: BRIGHT
    1: CLS
  4 GOSUB 4000
  5 LET s=w(1)/3: FOR h=s TO 145 STEP
    (145-s)/num
  6 LET g=g+1
  7 LET a=w(g): LET b=a/3
 10 FOR L=3 TO 93 STEP 10
 20 LET x=SIN (L/50* PI )*a+127
 30 LET y=COS (L/50* PI )*b+h
 35 IF L=3 THEN LET sx=x: LET sy=y
 60 LET f=f+1: LET x(f)=x: LET y(f)=y
 70 NEXT L
 80 LET f=f+1: LET x(f)=sx: LET y(f)=
    sy
100 NEXT h
1005 PRINT AT 10,10; OVER 1;"Please wa
    it"
1006 LET ta=0
1007 IF num>3 THEN LET ta=num-3
1010 FOR L=1 TO num*10-9+ta: PLOT x(L)
    ,y(L)
1030 DRAW x(L+11)-x(L),y(L+11)-y(L)
1050 NEXT L
1060 FOR L=1 TO num*11-1
1070 PLOT x(L),y(L)
1090 DRAW x(L+1)-x(L),y(L+1)-y(L)
2000 NEXT L
2050 PRINT #1;"Press z for copy,Any ke
    y to cont": PAUSE 0: IF INKEY$="z
    " THEN COPY
3000 PRINT AT 0,0;"Press's'to create,'
    a'to alter."
3010 IF INKEY$="s" THEN GOTO 1
3020 IF INKEY$="a" THEN GOTO 5000
3030 GOTO 3010
4000 INPUT "No.of sections in pot(max=
    10)";num
4005 LET hi=160/num: LET st=0
4007 PRINT AT 0,0;"Radius/pixeLs 0 25
    50 75 100 "
4010 FOR i=1 TO num
4015 LET st=st+hi
4020 PRINT AT 21,0;"Radius of section
    ";i
4025 INPUT w(i)
4035 GOSUB 6000
4040 NEXT i
4050 PRINT AT 21,0;"Press 'v' to view
    pot or 'a' to alter any radii. "
4060 IF INKEY$="v" THEN CLS : PRINT AT
     10,10;"Please wait": RETURN
4070 IF INKEY$="a" THEN GOTO 5000
4080 GOTO 4060
5000 CLS : PRINT AT 0,16;"0 25 50 75 1
    00 "
5010 LET st=0
5020 FOR i=1 TO num
5030 LET st=st+hi
5040 GOSUB 6000
```



```
5050 NEXT i
5055 PRINT AT 20,0;"Press 'a'to alter,
    'v' to view."
5056 IF INKEY$="v" THEN CLS : PRINT AT
     10,10;"Please wait": LET g=0: LE
    T f=0:: GOTO 5
5057 IF INKEY$="a" THEN GOTO 5060
5058 GOTO 5055
5060 PRINT AT 21,0;"Section to be chan
    ged (1 to";")";num: INPUT f
5070 INPUT "New radius ";r
5080 LET w(f)=r
5095 GOTO 5010
6000 PLOT 0,st: DRAW  INK 7;254,0: PLO
    T 127-w(i),st: DRAW w(i),0: PLOT
    127,st-5: DRAW 0,10: PLOT 127,st:
     DRAW w(i),0
6010 RETURN
```

As it is, line 2050 is set up for a Sinclair printer with the old "COPY" command. If you have a Spectrum and want screen dumps, then I suggest you use a program like Bradway's "Dumpy" for the Spectrum (phone Bradway Software on 0433 30799) and replace the "COPY" command with the appropriate RANDOMIZE USR address command.

David also sent me a listing for a decimal to binary program, but in his haste forgot to put it on the disc. As I am going to America tomorrow, and will not be back after the next press date (which is early because of Christmas), I haven't time to type it in. This is not meant to embarass David, who has been very good about corresponding, but to illustrate the sorts of deadlines and difficulties I run into, particularly if you do not send a listing on a disc. Happily, though, I've got enough for this issue. So that's all for now, folks. Please keep you short items coming to:-

John Wase,
Green Leys Cottage,
Bishampton,
Pershore,
Worcs,
WR10 2LX.

Don't 'forget, listing, disc and documentation, with assembly list and decimal data/Basic data poker if machine code. Bless you all.

SOFTWARE FOR THE SAM COUPÉ

DISK COPIER, SOUND SAMPLER + SCREEN EXPANDER £2.00

ROBOCOP 2 DEMO, 100 SCREENS DIGITISED FROM THE MOVIE £1.60

3½" BLANK DISKS 4 FOR £2.40
10 FOR £5.50

UK POSTAGE AND PACKING FREE
(OUTSIDE UK ADD 60p)

SEND CHEQUE/POSTAL ORDER TO:

JAMES BROWN
117 ONSLOW DRIVE
GLASGOW
G31 2QA

TEACHERS PET SOFTWARE
175 Craigton Road,
ABERDEEN,
Scotland,
AB1 7UA.

Teachers Pet Software have a great selection of Spectrum educational programs for use in schools or in the home.

There are now a number of these programs converted to use some of the advanced capabilities of the SAM.

Our very popular CLIP ART programs have been added to as well. We now have some 15 discs crammed with art suitable for use in Desk Top Publishing or Art Programs.

Why not write for an Order Form?

If you mention FORMAT when you place an order, we will be delighted to offer you one FREE program of your choice for every three purchased.

PBT ELECTRONICS

P.B.T. Electronics Ltd., Unit 17, Port Talbot Workshops, Addison Road,
Port Talbot, West Glamorgan, SA12 6HZ. Tel No. 0639 885008

SAM COUPE 512K COMPUTERS

SAM Coupé + 1 Disc Drive.....£199.99
SAM Coupé + 2 Drives.....£275.00
SAM Internal Disc Drive.....£79.95
SAM 256K RAM Expansion.....£29.95
SAM Comms Interface.....£29.95
SAM External Disc Interface...£29.95
SAMCO Mouse.....£39.99
SAM Technical Manual.....£16.99
SAM MasterDOS.....£15.99
SAM Dust Covers.....£3.99

DOT MATRIX PRINTERS

Citizen 120D (Parallel).....£139.99
Citizen 124D.....£195.50
Citizen Swift 9 Colour.....£199.99
Citizen Swift 224 Colour.....£269.99
Citizen Swift 224E Colour....£299.99
Seikosha SP1900.....£124.99
Seikosha SP2000.....£139.99
Printer Stands.....£4.49
SAM Colour Dump Software.....£8.99
(FREE on request with Swift 9/224 Colour printers)

CABLES & CONNECTORS

Parallel Printer (BBC/+D).....£7.99
Parallel Printer (+3 Type).....£7.99
Serial Printer Spectrum Type...£8.99
Spectrum Cassette Leads.....£1.99
SAM Scart to Scart.....£9.99
SAM Dual Joystick Adaptor.....£7.99
BBC/+D Dual Drive Connector...£14.99

SPECIALS

Lockable 3.5" Disc Box - 40....£3.99
Lockable 3.5" Disc Box - 80....£5.99
3.5" Bulk DS/DD Discs in 10s...£4.00
3.5" 80Trk Disc Drives.....£99.99
Citizen 120D Printer Ribbons...£3.99
MT81 Ribbons.....£4.49
Monitor Dust Covers.....£4.99
Printer Dust Covers.....£3.99
Star LC10 Ribbons - Black.....£4.55
Star LC10 Ribbons - Colour.....£7.99
3.5 or 5.25 Disc Cleaning Kits.£2.99
Printer Switch A/B.....£23.99

SPECIAL NEW YEAR OFFERS

Citizen 120D Parallel Printer Pack — £155.00

Citizen Swift 9 Colour Printer Pack — £225.00

Both packs include Printer, SAM Parallel Interface and Cable.
Colour Dump software also supplied with Swift 9.

MGT DISC DRIVES AND PLUS D INTERFACES REPAIRED WITH 3 MONTH GUARANTEE.
Please phone before sending repairs

BLUE ALPHA'S SAM PRODUCTS

NOW PRODUCED BY P.B.T.

THE JOY-MOUSE (works with FLASH + all other current software) £29.99

SOUND SAMPLER - Complete with software and FREE microphone £39.99

VOICE BOX - Make your SAM speak to you. £29.95

** Extra Special INDUG MEMBERS price for January. Voice Box £19.99
or Voice Box and Sound Sampler for just £54.99 **

All prices include VAT at 17.5%.
POSTAGE & PACKING: Printers/Computers £5.00 All other products £1.00
Make Cheques/Postal Orders Payable to PBT Electronics.
Allow 28 days for UK mainland delivery.

A PERSONAL VIEW

By:- Ken Elston.

For several years there has been a tendency to dismiss the Spectrum as a 'GAMES' machine. Magazines (other than FORMAT of course) have slowly but surely dropped articles that cover the more serious use of the Spectrum especially programming.

This really undervalues our favourite computer. But who is to blame for this state of affairs?

The simple answer is YOU ARE....

It is a simple answer, and not one that many will at first accept. So I will tell you a little story of what happened when I started work in a new office last year, it will help make my point clear.

The company I now work for is a large insurance group with offices all over the UK. The main office complex is dominated by the computer department I work in (as an Analyst). Close by there is a company social club which I was swift to join as I was new to the area (and the beer is cheap).

Like many social clubs there are dozens of 'special interest groups' and I was pleased to find that there was a computer section. It meets two lunch hours a week plus three evening sessions each month. Of course I was down there like a shot as soon as I heard about it.

I was welcomed at first in a friendly way. The lunch time sessions seem to involve propping up the bar which I find to be quite a good place to talk about computers. Being from the computer department I was accepted as one of the elite (their term - not mine).

However things began to go down hill when the question was posed "what kit you got mate?". My reply, two Spectrums and a SAM Coupé, was greeted with smiles. I could almost hear the thoughts rattling about in their heads "Hello, we got a right one here", the look on their faces made that clear.

Still, several long standing members were only too pleased to start showing off their equipment (computers I mean, you dirty minded lot). I sat through about forty minutes of Amega and ST demos, some of which I must admit were quite pretty, but little held mine (or anyones) interest for very long.

"So what else do you do with you computers?" I asked. Most seemed to list games playing as their main use, with word processing coming some way behind. Programming was way down the list, although a couple were experimenting with 'C' on the Amega and getting nowhere fast. In fact the broad consensus was that both the ST and Amega were very difficult to program - even in basic.

Next time I visited the computer group I took along my 'movable' machine, an old 48k Spectrum with DISCiPLE screwed underneath and a single 5.25" disc drive (much more robust than your average 3.5" I find) and a small 10" colour TV.

I showed them how easy it was to program, how easy the disc system responded, and I showed them some of the useful programs I have written over the last six years - many of which I still use every week. At first the attitude was "Oh yes, but you work with computers all the time, you just find it easy to program". I carried on to explain more and I impressed one of the PC owners by being able to list out a text file from one of his discs with just twenty or so lines of basic.

A few days later I was chatting to one of the other guys in my office, I told him about the computer club and about my Spectrums. What do you know.. He also had a trusty Spectrum that he had been using for over five years. Whats more, he had visited the computer club several months before but had not returned because he was put off by the boasting of other members about the flashy graphics of the 16 bit machines. Until I spoke to him he had been thinking of getting a cheap PC.

To cut a long story short, within a week I found that five other people in the office (out of 28) owned Spectrums and one of those had also purchased a SAM. Added to this, four others had kids with Spectrums. Several had, at one time or another, visited the computer section of the social club. Each had been put off by the attitude they found.

So what has this to do with the Spectrum being looked upon as purely a games machine? Well I think my little story demonstrates an attitude problem. No, not with 16 bit users, they just have more money than sense, but with you - the typical Spectrum / Sam users.

Sir Clive Sinclair built computers to be used. In other countries a computer is a computer is a computer. What I mean is, some computers may be potentialy more powerful than others but the Spectrum can do everything an IBM can do - just a little slower thats all.

Spectrum users were amoung the pioneres of home computing. Most of the All-Time best sellers appeared on the Spectrum first because it was one of the nicest machines to program on. Even if the Amiga and ST continue to sell at their present rate for another TEN YEARS they will only just achieve the UK sales that the Spectrum did in its first two years. Yes a lot of games appear, everyone likes games - you would be pretty boring if you didn't, but lots of real usable software was also written. More O & A level projects have been written on Spectrums, using one version of Tasword or another, than on all other machines put together.

Stop allowing people to run down the Spectrum. Stop apologising, don't refer to it as The Humble Speccy. The Spectrum is still the most widely USED computer in the UK. Own up, come out of the closet. Stand up and be counted. If there is a computer club at your place of work or in your local area then join up and wave the flag. You have nothing to be ashamed of.

One last word. I still attend my works computer club. And I recently pursuaded three other Spectrum users to join as well. My resent demo of the SAM Coupé caused a lot of interest (one PC owner still won't believe its got a Z80 processor) and my Spectrum setup with twin 3.5" drives is in much demand (well you try backing-up Atari ST disc using the built-in drive). And now, I have shown FORMAT around at work the respect for the Spectrum and SAM is growing fast.

- - - - - -

A PERSONAL VIEW. Views expressed in this column are not necessarily those of the publisher. Anyone who wishes to express 'A PERSONAL VIEW' should send their submission as a text file on disc to the usual address.

PHOTO CORNER

Last month I had this brain wave. Let's print photos of some of FORMAT's staff and regular writers I thought. Mad idea? No, not quite, until I saw the photos that were sent in. What a lovely bunch of kids....

So this month I'm printing up-to-date photos and details of who they are, you are welcome to try to match the modern image to the ones of just a few years ago. So, in order, from the top, there is:-

Jon Nixon - Artist - Responsible for FORMAT's front cover.
Jenny Bundock - Membership Secretary - Responsible for bossing the editor.
Annemarie Brenchley - Editor's Daughter - Without whom FORMAT would often take far longer to pack each month. (currently looking for a rich husband)
Sandra Byford - Proof Reader - Finds 'most' of my spelling mistakes.
John Wase - Responsible for editing the popular feature SHORT SPOT.
The Editor - He who does everything he can't find someone else to do.
Nev Young - HELP PAGE GURU - What would we do without him.
Carol Brooksbank - Our most prolific author. Is there no end to her talents?

SAMTAPE 4M

* MAKES SAM ACT AS A SPECTRUM
* WORKS ON MOST PROGRAMS
* EASY COPY PROGRAMS TO DISK/TAPE
* ACCEPTS +D/DISCIPLE SNAP SHOTS
* EMULATES TASWORD 2, DTP BY PCG
* LLIST+LPRINT,ETC. ALL KEYS WORK
* SCREEN COPY, SEARCH, ETC.
* FILE COMPRESION - SAVES 10-60%
* CHANGE PALETTE COLOURS.
* CONVERTS MESSENGER FILES INCL
* COMPRESSION - SAVES 25-90%!

ROM2 + DISK ONLY - COST £11.99

SAMDISK2

IMPROVED + A MUST FOR ALL DISK OWNERS. HAS EASY TO USE DISK MANAGEMENT TOOLS LIKE REPAIR, SUPERB FILE COPIER, PLUS MANY HANDY EXTRAS TO DELIGHT YOU! 256+512K SAMS. ONLY £11.99

* V.FAST DISK DUPLICATOR- 2 DRIVES
* IMPROVED REPAIR/VERIFY TRACKS
* IMPROVED V.FAST FILE COPIER
* MAX 5 SWOPS FOR FULL DISK
* ERASE, UNERASE, NAME DISK, MOVE.
* INFO TO TV/PRINTER. SQUASH, FILL.
* UNFORMAT/FORMAT TRACK.

SAM ASSEMBLER 3

ASSEMBLER - FULL SCREEN EDITOR, AUTO TAB, LIST LABELS, HEX/BIN/DEC, DUMPS, PRINTER, ERROR MESSAGES ETC. INCLUDES DISASSEMBLER + MONITOR/SINGLESTEP TO DEBUG CODE. 64 COL SCREEN. SCRATCH PAD. INCL 256+512K VERSIONS £10.99

SAM ADDRESS/PHONE MANAGER

5000 ADDRESSES AND/OR PHONE NUMBERS A DISK. SEARCH/AMEND/ALPHABETIC SORT. PRINT LABELS, ETC. HOME/BUSINESS. £8.50

SAM TOOLKIT

INCL SAM ASSEM.3 + REVERSE ASSEMBLER (MAKES S.FILE FROM CODE), 2ND DISASSEM, GUIDE FOR WRITING CODE ON SAM, MEMORY PAGING, ROM/RAM, EXAMPLES, ETC. £14.50

VISA Access MasterCard

* SUPERB UPDATE SERVICE
* **MONEY BACK GUARANTEE**

SPECTRUM

TAPE UTILITY D - TAPE TO TAPE BACK UP OF MOST SPECTRUM PROGRAMS. CONVERTS MANY FOR RELIABLE LOADING - £8.50.

TRANSPACK 2 (TP2) - TAPE TO DISK/M-DRIVE TRANSFER. 1000'S OF PROGRAMS INCL CLICKY, FIREBIRD, SPEEDLOCK. £11.99 NOT FOR NOVICE. INFORMATION BOOKS 1,2,3. £2.50 EACH. INFO OF 100'S OF TRANSFERS TP2 CAN'T DO AUTOMATICALLY.

Z80 TOOLKIT - "BRILLIANT PACKAGE" - YS 7/88. M/CODE PACKAGE SIMILAR TO SAM TOOLKIT. A REAL MUST! £8.99.

PLUS3MATE AND MICROMATE - SIMILAR TO SAMDISK BUT FOR +3 AND M/DRIVE RESPECTIVELY. WILL CLONE, COPY FILES, SECTOR EDITOR ETC. SUPERB DOCTOR/TOOLKIT. +3MATE £12.99. MICROMATE £11.99

SAM HARDWARE SPECIALS

512K SAM + 1 DISK - £200 INCL SAMTAPE 4
SAM DRIVES, INTERFACES, MESSENGER, ETC.
PHONE FOR SPECIAL OFFERS

UK POST FREE, +£1 EUROPE, +£2 REST. DISKS 3' £2.20 EACH, 3.5' 70P EACH. ALL MIN 4 POST FREE. SAE FOR DETAILS. PROP:L.EVANS. TEL (091) 2533615.

LERM, DEPT F/X, 11 BEACONSFIELD CLOSE, WHITLEY BAY. NE25 9UW.

INDUG'S CHARITY MEMBERSHIP DRIVE

By:- Jenny Bundock.

Here is a copy of the thank you letter from the New Heart New Start Fund at Wythenshawe hospital, the charity nominated by Bob Hamilton, the winner of our Summer Membership Drive. As you can see, a receipt for the amount donated is attached. The Hospital is Celebrating the 100th Heart Transplant and any donations received will now help them to achieve their new target of 1,000 transplants by the end of the decade. As their success rate is increasing and the number of survivors grows, they need money to build a separate center for in-patient and out-patient facilities with accommodation as, after surgery, all patients require close and careful monitoring. NEW HEART - NEW START is of course a registered charity, so a Deed of Covenant is a most efficient way of giving...as every pound you give is worth £1.25 to them. If anyone reading this is interested in fund raising for them or would like to give a donation personally then you can find the address and telephone number at the bottom of the letter.

NORTH WEST NEW HEART - NEW START APPEAL

7 November 1991

Mr. J. Bundock,
Membership Secretary,
Format Publications,
34 Newton Road,
Gloucester,
GL4 3LD

Dear Jenny,

I write on behalf of the committee to thank you very much for your donation in aid of the Wythenshawe Hospital Heart Transplant Fund.

To date we have performed one hundred and thirty transplant operations including two combined heart/lung and single lung transplants. The surgeons are planning to carry out up to 60 such operations this year.

A start has now been made on the £6 million project to create the North West's first purpose-built heart transplant centre at Wythenshawe Hospital. To be known as the "NW New Heart-New Start Transplant Centre", it will be equipped with the latest diagnostic and treatment aids and have its own consulting and examination rooms, operating suites and intensive care facilities.

Despite expected central government and Regional Health Authority contributions we need to continue our fund raising efforts to raise the balance of £1.5 million. To date we have £60,000 towards this sum.

A purpose-built centre will not only relieve the pressure on the hospital's existing facilities but will give Wythenshawe the resources it needs to develop as a regional centre of excellence and, indeed, the only such centre for patients in NW England and North Wales.

It is donations like yours which is going to make all this possible.

Yours sincerely,

Mrs. Ann Stuart,
Fund Administrator

21
Received of £ 12.50
For Cost

N.W. NEW HEART NEW START APPEAL

WYTHENSHAWE HOSPITAL HEART TRANSPLANT FUND

WINTER MEMBERSHIP DRIVE.

As you can see the money made from the Summer Membership Drive has gone to a very deserving charity. We are very happy here at INDUG to know that your efforts in introducing new members through the Summer months has certainly gone to do some good. Of course the success has also found us more subscribers and the more we grow as a club the more we all benefit. Now that we have established this team spirit, can I take this opportunity to remind you that we would like to carry on welcoming new members, and continue to donate to charities of this nature. I am sure, like us, you too get a great deal of pleasure in participating in a charity appeal however big or small.

You will have read in last months issue of FORMAT that we are going to continue with a Winter Membership Drive. Don't forget every new member introduced, £1 will be put aside and at the end of the drive we will select

a winner who then receives a lifetime membership to INDUG. The charity that is nominated the most by those introducing new members will then receive a donation.

Thank you to the readers who have already sent in new subscription forms to introduce a new member. I would like to see a lot more. Maybe you know someone who has a Spectrum or SAM Coupe (or perhaps you know someone who has had one for Christmas) who isn't yet a member of INDUG. All these new subscriptions will automatically be added to our Charity Membership Drive. I look forward to welcoming many more new members, and hearing from current ones, the more the merrier I say!

Over the last few months we have received many letters from members who have taken time to write to tell us how much they enjoy getting their FORMAT every month. I am unable to reply to these lovely letters personally, so I would like to take this opportunity to say a big thank you. The letters go into a special file on my desk and when I have a few quiet moments (usually when Bob has fell face down on his desk from exhaustion when FORMAT has gone out) I look through them and they give us here a great deal of encouragement to get on with the next issue. So thanks again, your letters are all read and they are very welcome.

One final note. By now anyone who qualified for the free demo disc should have sent in their stamped addressed envelopes and received a copy by return of post. I have however, a few envelopes filed away that members have sent to us but have not quoted their membership number. If you qualified for the disc and have sent us the SAE, but have not received your free disc, then contact me quoting your number and I will send you one. Slap wrists for not giving me your number in the first place though!

I hope you all had a wonderful Christmas and have fully recovered from the celebrations. I wish you Health, Wealth and Happiness in 1992.

> FRED <

How can something so cheap contain so many things?

GAMES, REVIEWS, SCREENSHOTS, INTERVIEWS, DEMOS, and LOTS MORE.

AND be so highly rated?

"Ridiculous value for money" - Bob Brenchley. "Unbeatable" - SCPDSA. "Professional..Excellant" - CRASH.

BUY IT NOW
AND FIND OUT FOR YOURSELF.

Only £1 on SAM Coupé 3½ Disc.

Send Cheques/Postal Orders to:-
COLIN MACDONALD,
40, Roundyhill,
Monifieth, Dundee,
Scotland, DD5 4RZ.

THE HACK PACK £8.99

The ultimate hacking package created by a professional hacker. Six programs which enable you to hack or crack protection on games. Find infinite lives, disassemble code - the scope is limitless. Complete with special instruction booklet featuring expert hints'n'tips and example hacks.

20 CHARACTER SET FONTS - £4.49
Twenty original ready-to-use fonts for your programs.
SPEEDY LOAD/SAVE - £4.99.
Convert your programs to fast load like the professionals.
INTERRUPT SOUND EFFECTS - £3.99
Create amazing interrupt driven sound effects that run without stopping program execution.
PROGRAM PROTECTION TOOLKIT - £4.99
Expert routines and tips package to protect your programs from hackers. Developed over years...
DRUM BEAT MACHINE - £3.99
Add your own custom built drum rhythms to your programs.
GAMES AID - £3.99
Toolkit of routines and tips to help creating your own games.
POKES GALORE - £3.99
MESSAGE SCROLLER - £2.99
DOUBLE HEIGHT PRINT - £2.50
SPI DROID £2.99 LASERWAR - £2.99
Send two 22p stamps for full catalogue. Add 50p P+P unless ordering more than one program.

SIGMASOFT
DEPT F, 9 PINE DALE, RAINFORD, MERSEYSIDE, WA11 8DF.

CHEAP DISCS

TO BUY OR NOT TO BUY

By:- John Wase.

An interesting problem. There are some cheap discs at the All Formats Fairs. You've always been taught that cheap discs ruin your drive and are unreliable. It's very tempting, though. Less than a fifth of the price of your usual branded ones. Should you buy? Hellpppp!!!!

I buy a lot of discs. They have gradually evolved through the 8" ones, down to 5¼" diskettes (a horrid word) and, with a little diversion into the unsuccessful 3" format intended for MSX computers (and bought up cheap by our favourite barrow boy) to the 3½" format. Meanwhile, their capacity has increased from single sided and 100k to double sided and 1.4MB.

This gives the clue. As you know, discs are coated with material containing particles of iron oxide, making them capable of being magnetised. And disc systems control the disc drive head(s) which lay down a number of tracks: 40 or 80 to each side of the disc. These are then divided by further magnetic markers into sectors, usually intended to hold 256, 512, or sometimes 1024 bytes.

Long ago (like about 11 or 12 years), when we had just started the move from 8 to 5¼" discs, the technology behind the coatings on the disc was still new, and the magnetic particles were still pretty big. Consequently, since a particle is either magnetised or it isn't, you couldn't store magnetic marks too close, or they got confused. In other words the resolution was poor. As the technology developed, so the coatings got better, and the magnetic particles finer. Double density discs became the norm. Further advances meant that you could get 80 tracks on a side instead of 40, and that provided that the drive had a read/write head installed on either side of the disc, both sides could be used.

The advent of 3½" discs meant that the coating had to be that bit better so that the tracks could be still closer - a lot of my early ones are 40 track single sided. Things are still moving, however, and high density (up to 2MB) discs are now common. Fine, but how does this help?

Well, it means that new discs coming on the market have either been in the back of a warehouse since around 1985 (and that's pretty unlikely), or are probably the standard DSDD (80 track double sided, double density), implying that they'll format to 800K without difficulty.

Let me tell you about my experiences in general. And be reassured. True, there are rogues in all markets, but in general, I've had few problems, and I've bought discs from a wide variety of sources. Occasionally I've had odd ones that haven't worked. But not often, except for one batch. These were actually one of the more expensive lots that I bought - branded 5¼" discs from a well-known manufacturer. I'd bought a box of ten discs, for I'd run short and was in a hurry. They would format fine on the Discovery system where I still keep much of my text. But on the more demanding DISCiPLE, they wouldn't. Both are double sided 80 track formats. However, Discovery is only 720K (2 sides, 80 tracks, 9 x 512 byte sectors per track) whereas DISCiPLE is formatted to 800K (2 sides, 80 tracks, 10 x 512 byte sectors per track). And the baud transfer rate is greater with the DISCiPLE (that is, information is transferred quicker, so that the time a head is over one piece of the disc and the time which it has to make a magnetic mark is correspondingly

less). It all makes for that much more tetchiness.

Apart from that, I've really had astonishingly little trouble. An odd handful of 5¼" discs (I was given them anyway) wouldn't format - I guess they were 40 track or single sided, or just rejects - imperfect coating on one side, perhaps. One or two odd 3½" discs here and there wouldn't format on SAM (note how it verifies as it goes along), but would, surprisingly, on the Plus D with its very similar format. SAM refused to lay down the first track. So all-in-all, I've had very few problems.

If a 3½" disc fails to format on SAM, I use it as a 40 track disc with Discovery, where it won't give difficulties. Take heart, though - in over 1000 3½" discs, I've had no more than two or three. And I've never had problems like dirty heads, or all the magnetic coating coming off - even with discs 10 years old.

Major problems have always been associated with the drive unit. Because I hawk these round with me they are easily misaligned - and even when purchased new, I have found differences - it prefers discs it's formatted. Once a drive gives trouble - get a brand new innards at around £50.00 (£80.00 for a 5¼), and you'll have no further problems. Even if, like me, you buy the cheapest possible discs, but remember to keep a backup copy of everthing - just in case you get that one disc in a thousand that looses your data.

SAM COUPÉ AND SPECTRUM UTILITIES USEFUL &

"OUTLET"

GRAPHICS INFO AND IDEAS!!

INTERESTING HOMEGROWN SOFTWARE!!

Monthly since 1987 – now on ALL of the popular SPECTRUM systems

SPECIAL OFFER – First time buyers send only £2.50 for the latest issue on .....

PLUS 3 DISC, DISCIPLE/PLUS D, OPUS, MICRODRIVE, TAPE AND SAM DISK

Chasron Software, 606 Loughborough Rd, Birstall, Leicester LE4 4NJ

VTX5000 MODEMS - GET ON LINE

Spectrum/+ £15, +2A/+3 £20, 128K/+2 ring for details
(add £3 per unit for overseas delivery)

THE FIXIT £9.50

Lets 48k addons run on your +2A/+3 (add £1 for overseas)

ALSO AVAILABLE:- +3 Tape leads £3.50,
Keyboard Membranes - 48K Rubber £4.50 Spec+/128K £7.50

NEW SAMPLIFIER £20 *NEW*

Self contained stereo amp which is powered from SAM. Plugs into lightpen port. Stereo 3.5mm socket will drive headphones or speakers. Speakers available for £5 pair.(For overseas delivery please add £1 for amp, £2 for amp and speakers)

B.G.SERVICES (Brian Gaff).
64, Roebuck Road, Chessington, Surrey, KT9 1JE. Tel 081 397 0763
Please allow 28 days for delivery

THOUGHT SPOT.

By:- Jeremy Cook.

Hail (that's a greeting, not a weather prediction), and welcome to Thought Spot. If you were here last month you will know that I am omitting the prize puzzle from every other month, starting this month. Instead you will find the solution for the robot prize puzzle, with a sprinkling of the usual puzzles and mind-ticklers you have come to expect. I am currently looking at the domino and hanoi puzzle entries, so details of those should appear in a couple of months, or two.

WATCH IT

This puzzle was devised by the well known puzzler Lewis Carroll. Which is more useful, and why: a watch that loses one minute every hour, or one that doesn't go at all?

Puzzle №9: The Robot

This was the first puzzle to appear twice because of postal troubles. I am pleased to say that it was worth repeating, for I received 13 entries. These were from: Bill Lane, Ettrick Thomson, David Stockford, John Saunders, Roy Gardner, Craig Turberfield, Steve Warr, James Maccallum, Alan Cox, Sander van den Berg, C Felgate, Leslie Russell, and Csaba Gondos. Too many to discuss every program, so I'll just mention some of the better ones. I have used people's first names where possible for brevity; I hope this does not offend.

Csaba's program (sent in by friend Istvan Ordog) was written in machine code, and would also double as a fill routine, though a slow one. A fill routine has to visit every point of a 'maze', and can find an exit which is defined as a point. It never really occurred to me that anybody would solve one of these problems in machine code; in future I will exclude such programs.

HANKY QUICKY

In how many different ways can an ordinary square handkerchief be folded in half four times?

There seemed to be three basically different methods: (1) recursion; (2) random; (3) counting the number of times each position is reached, with various ways of looking at all the directions from a given position.

(1) Ettrick's program was in his usual neat, succinct style, and was the only one that didn't move a robot on screen; it just gave the possible routes. Steve's program was written on a Spectrum, so the recursion had to be catered for "by hand". A very neat program. Both work a bit like this:-

```
DEF PROC search dirn
  IF position NOT visited
    THEN mark position
      IF position = exit
        THEN success
        ELSE search N: search E:
             search S: search W
END PROC
```

Of course, it must be possible to move in direction 'dirn' and we don't want to 'search' in the direction we have just come from, but this is the sort of thing needed.

(2) Roy, and his "Amazing Mazo" took the random approach, ie. choose a direction at random, and either take one or a few steps in that direction. Enhancements: a shadow to stop Mazo going back on his tracks; dead end tagging; taking the best route of many attempts; 'chalking' the wall to remember the way out; and more.

SHIP AHOY

Pauline is at the top of a cliff and can see a boat out at sea. Paul is exactly 71 feet directly below on the beach, and he can see the same ship. The boat is an exact number of feet from both observers. How long will it take to get to a jetty 20 feet from Paul if its speed is 5 feet per second?

(3) This was the most used method, which usually went something like this:-

Mark position; take first possible direction that isn't going to a previously marked position; if no such direction go the way visited least number of times; repeat until exit found. Hence two arrays were often used: one for maze marking, the other for counting visits. Many used just one array by marking the number of visits on the maze.

An interesting detail was the number of different ways the maze was represented. Some people used the same format as the winner, others went for a representation more exactly like the one I set, with horizontal and vertical walls, and still others represented the walls by large or negative numbers to distinguish them from blank spaces (zeroes) which were incremented when visited.

Choosing the winner was a very difficult decision. I liked many of the programs. I also liked the way most people wanted to test their programs further and supplied other mazes, or maze building routines. What I did was select a shortlist of the best six programs, and then plucked one at random. Thus I declare C Felgate the winner, and reproduce the program below (with only minor changes).

The variable 'jump' (0 or 1) shows the equivalence between this maze and the one I set. The arrays store the direction a position was entered by, and the number of visits there.

```
10 GOSUB maze
20 DIM py(4),px(4),m(11,11),t(11,11
   )
30 LET py(1)=-1,py(2)=0,py(3)=1,py(
   4)=0
40 LET px(1)=0,px(2)=-1,px(3)=0,px(
   4)=1
50 LET d$="↑<v>",ry=6,rx=6,rd=1,m(r
   y,rx)=rd
60 LET jump=1
70 PRINT AT ry-1,rx-1;d$(rd)
80
90 DO
100 LET nry=ry+py(rd),nrx=rx+px(rd),
   w$=SCREEN$(nry-1,nrx-1)
110 EXIT IF w$="E"
120 IF w$<>" " OR (m(nry,nrx) AND t(
   ry,rx)<>3)
130 GOSUB newdirection
140 ELSE
150 PRINT AT ry-1,rx-1;" "
160 LET ry=nry+(py(rd)*jump),rx=nrx+
   (px(rd)*jump)
170 PRINT AT ry-1,rx-1;d$(rd)
180 IF m(ry,rx)=0
190 LET m(ry,rx)=rd
200 ELSE
210 GOSUB newdirection
220 END IF
230 END IF
240 LOOP
250 PRINT R#1; AT 0,0;"I've found th
   e way out !!!!": PAUSE : STOP
260
270 LABEL newdirection
280 LET rd=m(ry,rx),try=t(ry,rx)
290 IF try=1 THEN LET rd=rd+2
310 IF try=2 THEN LET rd=rd+1
330 IF try>2 THEN PRINT R#1; AT 0,0;
   "Cheat .....theres no exit": PAU
   SE : STOP
360 LET rd=rd MOD 4+1,t(ry,rx)=try+1
370 RETURN
380
390 LABEL maze
400 PRINT "*E*********"
410 PRINT "*   *     *"
420 PRINT "*** * * ***"
430 PRINT "* *   * * *"
440 PRINT "* * *** * *"
450 PRINT "*   *     *"
460 PRINT "*** *** * *"
470 PRINT "*   *   * *"
480 PRINT "* *** *** *"
490 PRINT "*     *   *"
500 PRINT "***********"
510 RETURN
```

Turn to page 25.

YOUR LETTERS

Dear Editor,

I have a SAM 256K computer, and have been considering buying a weather satellite receiving kit from Maplin Electronics. The receiver is said to produce a signal suitable for many computers, BBC-B etc., but SAM is not mentioned. Presumably particular code programs are required. Has anyone used such a kit (a Heathkit I believe) with a SAM, and if so can they advise on hardware and software?

Yours sincerely, J.Muir.

I trust one of our readers will come to the aid of this man in distress, because I know very little on this subject. Ed.

Dear Editor,

It is interesting to see that £1 off tickets are flooding the scene now for the computer shows. They have been coming at me from all directions and I have now lost count of how many. The organizers perhaps are starting to get the message, but even so I consider the reduced price of £3 still too much especially after the last one in Birmingham.

Spectrum/SAM was poorly represented to almost being nonexistent. The problem now is that there are just too many shows a year around the country and repeated at the same locations. For the small company's or Spectrum/SAM related publications, soft/hardware suppliers find it difficult to spare the time or expense of attending. If anyone was considering a SAM and went to that show to see what support there was for it they could not be forgiven for thinking it had little support and turning towards other makes that were on demonstration with supporting software by the multitude.

I was told by SAMCO they were not going so I assume they were simply represented but even so I did not even see a SAM demonstrating the software being sold to attract attention. Two disc mags were showing their own, plus FORMAT, and I think that was about the lot. I know there are lots of sources of material that were not in evidence. In fact I forked out the £3 but was so disgusted I left within the hour and not likely to go again. 50p is nearer the mark for that show.

Would it not be better for all to get together rather than individual stands and put on a combined stand that at least showed and more importantly demonstrated what was available.

This comes on top of my dissatisfaction with the SAM computer on a number of counts. I note your comment where you say it seemed NCE had an axe to grind re SAM. I did not take NCE regularly but on the odd times I did the comments I saw had grounds from my experience. Is it more a case "the truth hurts". I am not happy in buying a new SAM and paying extra for the extra memory only to be told a month or so later that I wasted my money because the extra memory is now being given away "free" with SAMs. Also it seems the upgrade on its own is now a bit cheaper in any case.

On top of this the "new" PSU came with 2 faults that had to be repaired and so far Samco have avoided responsibility although they have been told at least twice. Add to this it had a dodgy drive that I had to pay to return and after the "repair" it was still the same so I had to pay again to send it back a second time.

I see SAMCO were selling SAMs at £150 recently, so add £80 for the second drive and £30 for extra memory makes a total in order of £260-£270. Why did I have to pay nearer £350 plus an additional £6 postage in returning drives plus repairs to PSU.

Remember this is the third SAM I have had and the previous two had to be returned because of faults. Including faulty PSU's. (Do they never learn? Previous fault was the same as one of the last faults - poor soldering). It certainly could not have been tested properly before sending out.

If I wrote to a magazine relating my experiences it could not be considered "grinding an axe" stating facts. I have still not entirely resolved problems my with Samco.

Re-reading through the COPIER review and my originals there is too close a resemblance to my review for comfort.

Incidentally, some firms do seem to look after customers better. I bought 2 monitors that were second hand. They both had a problem with colour drift due to dirty control pots. The firm offered to repair but on pointing out the cost of returning and the snag of sending them through the post, they refunded some £55 to enable me to have them repaired locally. I did not as so far with Samco have to keep forking out more and more money to get things put right.

Yours sincerely, M.Perry.

I thought twice before printing this letter. First because it was so long, and seconly because it was one long moan.

Now I like to look on the bright side of life, as most people do. But from time to time I come across someone who likes to find fault with everything, and I think Welcome that I have found just such a person in you.

The All Formats Shows have proven their success. Yes, I too believe that £4 is a bit much - but then I think the price of a lot of things is a bit much these days. In 1982 I paid £2 to get into one of the early computer shows in London and I hope my income has more than doubled since then. As for the last show in Brum (10th Nov) it was well attended and there was plenty for visitors to see - did you go to the same show as me? At 50p the organizer could never afford to advertise and promote the shows. The radio ham shows you mentioned in your last letter (see October issue) do very little advertising, news is spread by word of mouth that's how they stay so cheap, but the radio fraternity have the advantage of radio, you just can't compare them to computer users.

I saw many stalls that were not demonstrating their software, ST; PC and Amega as well as SAM and Spectrum. Have you every tried running a computer and TV at a show? It isn't easy, so many don't bother, they are there to sell there products not allow you a free go on their latest game.

Yes it is a good idea for companies to band together. I do that with SD Software (me handling the south and them the north). Other compaies already link up but you need to have products that don't compete or there would be a conflict of interests.

Now one show a year is OK, if you make it, but would you want to wait 11½ months if you had just missed one? Computing is a fast moving hobby and it is good to see shows all over the county. With the Computer Technology Fairs expanding as well as the All Formats Shows people will soon be able to go to a reasonably local show at least every other month. I don't think that is a bad thing.

Now we come to the old, old, story. I purchased a new video last year - three months latter I could have saved £150. If I had sent of my cheque just one week earlier I would have had a ZX80 not a ZX81. Prices fall, specs change, the world moves on. Well one day they will be giving computers away with corn flakes, if you want to save money wait for then. The £150 price tag was a very special offer to mark SAMCO's birthday, yes prices have dropped on SAM - and every other computer - because the price of componants has dropped in the last year. Your experiances with SAMs are not typical, I should know as I spend much of my day talking to people on the phone who have technical problems. That is what the HOTLINE is for - have you ever used it to try to sort out a problem?

No company makes a machine that is perfect every time, and that applies to more than just computers. SAM's reliability is no better or worse then

other machines on the market and SAMCO do at least operate in a friendly way which is more than can be said for Amstrad or Commodore. And by the way how do you know a problem relates to poor soldering unless you have invalidated your guarantee by opening the power supply... And please don't labour under the impression that I am going out of my way to defend SAMCO, they have their faults and so, at times, does their machine. However I live in the real world (even though I look on the bright side of it when I can) which you seem not to have caught up with. If you don't like SAM then you don't have to own one. But I, and many others, do work with SAM and enjoy the machine, don't expect a Rolls Royse for the price of a Mini.

Finally, if at any time you want to see the original of the review I printed of the COPIER you are welcome to call in at the office. One review of a utility will always be very similar to another if the reviewer is just stating facts and not opinions.

If any other readers want to comment on the above subjects then I will be fair and even handed in printing your letters. Ed.

Dear Editor,

Could you please ask your readers if they know how I can connect the monitor from an old Amstrad CPC 464 to my Spectrum+2 (gray) computer. There is a connector on the monitor but I can't find out which pin is which, there is nothing in the CPC's manual.

Yours sincerely, Tom Fisher.

Over to you readers.... Ed.

* - * - * - * - * - *

Letters may be shortened or edited to fit on these pages.

This is <u>YOUR</u> letters page so it is up to you, our readers, to fill it. Send your letters, on any subject you feel would interest other readers, to our usual address, keep them as short as you can so we can fit in as many as possible.

Continued from page 22.

<u>TRAVEL INFO</u>

You come across a strange signpost, pointing in several directions. Rome, it says, is 215 miles away; Vienna 311 miles away; Bonn 209 miles; and London 320. Paris, however, has the distance missing. Fortunately, there is a logical connection between the places and distances, so you can work out the how far Paris is, can't you? (hint: to do with individual letters)

Not far to go now: just this final paragraph in fact, unless you count the answers below. Thank you all those who have entered prize puzzles. And a general message: your solutions please. I am very happy with the response to robot and hanoi puzzles. As I often say at this point, if you have anything you want to say, or that might interest me, then write to me at the usual address. I would like to know what you think about having a prize puzzle every two months instead of monthly. All the best, bye.

--oOOo--

<u>SOLUTIONS TO DECEMBER'S PUZZLES</u>

Heart Surgery:-
bOOKKEEper, aYRRh (or pYRRhic), maGNUm, bABYish, aNXious, speCTRUm, aWKWard, seTSQuare.

Hard Boiled:-
Start both timers and put eggs in water; after 7 mins, restart small timer; at 11 mins, when big timer runs out, the small timer has been running for 4 mins; invert small timer so it runs for another 4 mins; when timer runs out, 15 mins has elapsed, and the eggs are boiled to perfection!(?)

Right or Wrong:- order with statements

a) true is CABDE (ie Charlie first, Alf second, etc.)
b) false is BEDAC

Twelfth Number:-
next to the 11: look at the number of letters.
(ie. one=3, two=3, three=5, etc.)

Software for the SAM COUPE

£12.50 **SC_ASSEMBLER**

MAIN FEATURES
99% Machine code, 64 col friendly autorun editor for ease & Speed. Recognises all the set of opcodes. Data compressed allowing:-
96K Source,20K Asm code (256K Sam)
288K Source,84K Asm code (512K Sam)
Full listing to screen and printer Buffer search and Disassembler and much more.

SC_ASSEMBLER is a very easy to use editor Assembler, just type in the text given with no spacing and SC_ASSEMBLER will reposition and do a comprehensive check. If any errors displays in clear english what is wrong, easy enough for the beginner, yet powerful enough for top programmers who have already used my Assembler to program Top Sam games.With Source files to get you started and a professional written 45 page Manual you can't go for wrong.

£12.50 **SC_FILER** A POWERFUL SAM COUPE DATABASE

MAIN FEATURES
99% Machine code, Data compressed allowing Massive capacity storage (128K:256K Sam) and 384K:512K Sam). Display 4 different Mode 4 layouts you define fields of any size,col, position,and charset. Auto sorting on any field, search buffer finds records you want. Lprint upto 4 different layouts.

SC_FILER the Database program, is a very easy to use, yet powerful and flexible enough to keep any type of information you need,from a simple Address file to business files for Clubs and small Companies. From a budiness files for Clubs and small Companies. From a touch of a key you can add,edit,insert,Wipe,List and Search,also SC_FILER can be used as a mini word processor with its word wrap,justify editing features. SC_FILER comes with a 25K demonstration Z80 MC database and a 30 Page professional Manual. I can also convert your GM_BASE and LERM Address Manager files to use on SC_FILER.

SC_MONITOR

WATCH THIS SPACE
COMING SOON FEBRUARY 1992
ANOTHER POWERFUL UTILITY PROGRAM
TO DEBUG AND EXAMINE MACHINECODE

£12.50 **SC_AUTOBOOT**

SC_AUTOBOOT is a new chip to fit in and replace the Same Rom. When you now turn on the Sam Coupe there is no long wait for Sam to repeat,no need to press F5 to boot up the system Dos.
Just switch on the Coupe and in a split of seconds the Coupe is reset and does an automatic Autoboot like the Amiga and Atari ST.

Have you got an old Rom still fitted to your Coupe then here is an excellent way to upgrade to my New chip with fast reset and Automatic autoboot and remains 100% compatible with most update Rom 3.0 chip which Software companies guarantee Software to work with 100%.
Type on your Sam PRINT PEEK 15 if the number printed on the screen is not 30 then you have an old Rom.
The chip is easy to fit with easy to follow instructions all you need is a small cross-head and flat-head screwdriver you probably got in your garage.

£1.50 **SC_PD1**

SC SPECTRUM Spectrum Emulator
Turn the Sam Coupe into a Spectrum and Extra Sam keys like DELETE etc work
Save to Sam Disc from Spectrum programs
Load in Plus D Snapshot files
Outputs to printer work
Includes a copy of Spectrum 48K Rom)
SC DIRECTORY The Disc Directory Utility
SC COMPRESSOR 1 Screen/Code compressor
All 3 utils come with 16 page Manual.

DISCS

60p each PRE-FORMATTED 3.5 DSDD Discs
READY TO USE IN COLOURS
ORANGE BLACK RED
YELLOW GREEN WHITE

40p each PRE-FORMATTED 3.5 DSDD Discs
READY TO USE IN
STANDARD COLOUR BLUE ONLY

PLEASE ADD £1 POSTAGE (£3 OVERSEAS)

DUST COVERS

High Quality Dustcovers in Pure White with Blue Rim Trimming, Waterproof, Machine Washable, Non Shrink, Non Fade

£3.50 SAM COUPE
£7.50 MONITORS

If Ordering a Printer or Monitor cover Please state Model.

£1.00 **SC_PD2**

SC COMPRESSOR 2
A Powerful screen compressor, crunches Screens down by an average of 50% even complex digitized screens crunch well. 15% better than MasterBasic SAVE modes

FAST ORDERS

If you need any of the above items quickly, then just phone from 6pm-9pm,Your order will then be despatched first thing next morning. When goods reach you, just send a cheque or postal order for invoiced items.

Steve's Software
7 Narrow Close, Histon, Cambridge, CB4 4XX
0223 235150 6pm - 9pm

QUALITY SOFTWARE at low prices you can afford, Full technical Customer care, satisfaction even Telephone to the wee-hours when your at home from college/work, At cheap rate directly with the programmer Excellent low cost Update service.

STEVE'S SOFTWARE is a member of TRAM SAM

FORMAT READERS SERVICES

FORMAT BACK-ISSUES

All issues, from Volume 3 Number 1 right up to the latest issue, are still available. To order quote the Vol No and Issue No. Price £1.50 each, (5 or more £1.25 per copy)

Volume 1 and Volume 2 of FORMAT now available only as complete volumes.
Order Code FBI-V1 (Vol.1) Price £10.00
Order Code FBI-V2 (Vol.2) Price £12.00

FORMAT BINDERS

Hardcover binders to protect your valuable magazines. Each will hold 12 issues, easy to insert/remove.
Order Code FMB-01 Price £4.50

CONVERSION SOFTWARE

For DISCIPLE or PLUS D (supplied on tape). You must have the original tape copy of the software to be converted. Most require latest version of DOS.

ARTCON 48 Converts the 48k OCP ART STUDIO to disc operation.
Order Code FST-02 Price £4.50

TASCON 128 Converts TASWORD 128 to disc. All features retained.
Order Code FST-05 Price £4.50

TASCON +2 As for TASCON 128 but converts TASWORD +2 to disc.
Order Code FST-06 Price £4.50

LATEST DOS VERSIONS
G+DOS 2a for PLUS D (ROM 1a)
Order Code FST-90 Price £4.50

GDOS 3d for DISCIPLE (ROM 3) Includes new set-up program, far easier to use.
Order Code FST-91 Price £4.50

SAMSPEC SOFTWARE

SAM + Spectrum software on one disc.

FONT LIBRARY #1. 100 screen fonts Plus support software, easy to use on either computer. Supplied on 80 track disc (state 3½" or 5¼" on order) or special +3 disc (Spectrum files only)
Order Code SSD-01 Price £6.95

MONEY MANAGER Advanced Personal Budgeting System, Spectrum version requires 128k/+2 (not +3) Supplied on 80 track disc (state 3½" or 5¼")
Order Code SSD-02 Price £12.95

HARDWARE

S.P.I. - SAM's Parallel Interface.
A full feature Parallel Printer Interface. Totally compatible with SAM's ROM and DOS printing routines and with utility programs like FLASH and TASWORD 2. The interface has the added advantage of being BI-DIRECTIONAL so allowing information to be read into your Coupé from almost ANY other computer. Uses standard BBC printer lead (see below). RRP £21.95
Order Code SPI Price £15.95

PRINTER LEAD
Top quality parallel printer lead (BBC Standard). 2 meters long. For use with DISCIPLE, PLUS D or SAM.
Order Code PPL-01 Price £7.95

SAM Coupé SOFTWARE

DRAGON TILES
The thinking man's game. Always different, always taxing, the most addictive game so far written for SAM. Supplied on 3.5" disc. (tape soon)
Order Code SCD-01 Price £6.95

SAM DEMO DISC #1
Utilities, demos, screens, a game, and lots more. A real bargain.
Order Code SCD-02 Price £1.50

ORDERING

All prices include UK Postage and Packing. Overseas readers please add 10% to total order for extra postage. Please WRITE YOUR ORDER ON A PIECE OF PLAIN PAPER, and mark envelope ORDER.

Clearly state Order Code; Title; Quantity required; price & add any postage as above. Remember to quote your membership number or we can't send out your order. Payment in STERLING by Cheque (UK bank), P.O. Euro Cheques or Cash. Make cheques payable to FORMAT Publications. Payment MUST accompany order, do not send by different route.

Please allow 28 days for dispatch. Shortages or non-delivery should be reported within 14 days. FORMAT Publications will not be held liable for delays or non-delivery due to circumstances beyond its control.